

EXPLANATION OF SIGNIFICANT DIFFERENCES

for the

United Chrome Products, Inc. Superfund Site

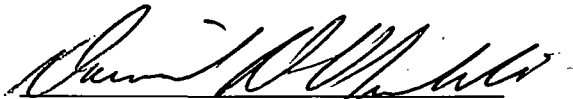
Benton County, Oregon

ORD009043001

August 2010

Issued by:

Date:



Daniel D. Opalski, Director
Office of Environmental Cleanup
U.S. Environmental Protection Agency

28 August 2010

I. INTRODUCTION

Site Name and Location

The United Chrome Products, Inc. Superfund Site (United Chrome or Site) is located about 3.5 miles south of the City of Corvallis, Oregon, at 2000 Airport Road in the Airport Research Industrial Complex in Benton County, Oregon. The Site encompasses approximately eight (8) acres and includes all areas to which contaminants have migrated and all areas in close proximity to, but not necessarily contiguous with, the contamination that are necessary for implementation of response action. The City of Corvallis, Oregon, is the sole potentially responsible party (PRP) for the Site. The CERCLIS ID number for this Site is ORD 009043001.

Lead and Support Agencies

The United States Environmental Protection Agency (EPA) is the lead agency for conducting response actions. The Oregon Department of Environmental Quality (DEQ) is the support agency for the Site.

Statutory Citation for an Explanation of Significant Differences

Section 117(c) of CERCLA, 42 USC §9617(c), and the National Contingency Plan (NCP), 40 C.F.R. Section 300.435(c)(2)(i), require that an Explanation of Significant Differences (ESD) be prepared when the differences in the remedial action significantly change but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, or cost.

Date of Record of Decision

The Record of Decision (ROD) for the Site was issued on or about September 12, 1986. An ESD for the Site was finalized on December 20, 1991. An Administrative Order (AO) was issued to the City of Corvallis on August 7, 1989. A Consent Decree (CD) for the Site was entered into by the United States of America on behalf of EPA, as plaintiff, and the City of Corvallis, as defendant, and was signed on or about June 22, 1992.

This is the second ESD for the Site. This ESD addresses the need for institutional controls at the Site as part of the remedy to ensure protection of human health and the environment.

Circumstances Prompting this Explanation of Significant Differences

This ESD describes a change to the Site remedy made after issuance of the ROD. The remedy relied on the Site remaining industrial, with no access to contaminated groundwater or unacceptable exposure to residual contamination in soils, but these restrictions were not explicitly outlined in the 1986 ROD. After issuance of the ROD, EPA issued an AO to the City of Corvallis (City) requiring the City to, among other things, operate an upper zone groundwater extraction and treatment system. The AO was amended several times to adapt to changing circumstances and to allow the City flexibility to implement the response action. The CD, issued in 1992, required the City to, among other things, adopt measures to restrict groundwater use or pumping wells or other activities that could jeopardize work, i.e. all activities the City is required to perform under the CD, or that could create a threat to human health and the environment on City-owned property in the vicinity of and including the United Chrome Site. To ensure these

conditions are met as long as necessary, explicit institutional controls are warranted and are expressly added to the remedy through this ESD.

Administrative Record

This ESD is supported by and, when issued, will become part of, the Administrative Record file for this Site, in accordance with the NCP, Section 300.825(a)(2). The Administrative Record is available for review at the following locations: U.S. Environmental Protection Agency Superfund Records Center, EPA Region 10, 1200 Sixth Avenue, Suite 900, Seattle, Washington 98101; and the Corvallis Public Library, 645 N.W. Monroe, Corvallis, Oregon 97330.

II. BACKGROUND

Summary of Site Description, Land Use, History, Contamination and Remedy

The Site is located in an industrial complex and consists of approximately eight (8) acres, located in the Airport Research Industrial Complex in Benton County. The Site and surrounding contiguous property is owned by the City of Corvallis (City). United Chrome began chrome electroplating operations in 1956 at the Site after leasing property from the City. A dry well disposal pit outside of the electroplating building was used from 1956 to 1975 to dispose of floor drippings, washings, and product rinsate. This pit, along with leakage from two plating tanks inside the electroplating building and spillage from acid and caustic storage tanks outside of the electroplating building, accounted for the most probable sources of contamination at the Site. DEQ discovered the Site in 1982, and the Site was referred to EPA for hazard ranking and ultimately listing on the National Priorities List (NPL) of sites on September 21, 1984. Electroplating operations were finally discontinued when United Chrome ceased operations in early 1985.

Initial concentrations of chromium in the soil at the Site ranged from 200,900 milligrams/kilogram (mg/kg) at the surface to 29,500 mg/kg 12 to 15 feet below ground surface (bgs). Groundwater contamination was found to exist in an upper aquifer plume extending downgradient from the pit (drywell) with chromium concentrations ranging from 142 to 689 milligrams per liter (mg/L) and in a deep aquifer plume with chromium concentrations ranging from 0.7 to 6.5 mg/L. In addition, surface water collected from nearby drainage ditches and other locations downstream of the Site showed chromium concentrations ranging between 0.08 and 4.3 mg/L, while sediment samples showed chromium concentrations between 48 mg/L and 27,900 mg/L. To address the contamination, several response actions were taken.

EPA conducted a Remedial Investigation (RI) and Feasibility Study (FS) in August 1985 and a removal action at the Site from July to November 1985. On September 12, 1986, a ROD for the Site was signed. The remedial action objectives for the Site developed to protect human health and the environment included: adequate protection of the public from contact with and ingestion of contaminated groundwater, minimizing threats from and adequate protection against the spread of contaminated groundwater, and adequate protection of the public against contact with and ingestion of contaminated soil and sediments. To achieve these objectives the major

components of the remedy included: installation of shallow groundwater extraction wells to extract contaminated groundwater from the upper aquifer, installation of deep groundwater extraction wells to extract contaminated groundwater from the deep aquifer, construction of onsite treatment equipment to treat extracted groundwater before discharging the treated water into Muddy Creek or the City's wastewater treatment facility, and two percolation basins to flush contaminated soil. In addition, culverts were to be installed in an adjacent open drainage ditch to isolate surface drainage from the inflow of contaminated surface and groundwater from the Site. EPA issued the City an AO, effective September 1, 1989, requiring the City to, among other things, operate an upper zone groundwater extraction and treatment system. An ESD was completed on December 17, 1991, describing necessary changes to the remedy to: demolish the United Chrome building; reroute the surface drainage ditch; install an infiltration trench, injection wells and additional upper zone and deep aquifer extraction and monitoring wells; discharge treated water to the City's publicly owned treatment works (POTW); and to modify the deep aquifer treatment cleanup standard from 0.05 mg/L to 0.1 mg/L to be consistent with the maximum contaminant level (MCL) for chromium.

The United States on behalf of EPA entered into a CD with the City on or about June 22, 1992. The CD requires, among other things, that the City operate the upper zone and deep aquifer extraction well system to be consistent with the most recently EPA-approved Pumping Plan and any revisions and to keep maximum discharge limits of chrome in the treated groundwater effluent leaving the Site below the amounts specified in the Scope of Work (SOW) for the CD. The terms of the CD also require the City to provide the United States, the State of Oregon, and their representatives including contractors, with access. In addition, the CD requires the City to establish institutional controls to restrict groundwater use or pumping wells or any other activities in accordance with the EPA-approved Pumping Plan so as to disallow jeopardizing the Work, as defined in the CD, and to avoid creating a threat to human health and the environment on City-owned property in the vicinity of and including the Site.

Engineering and institutional controls were put in place at the Site. These controls included locked fencing around the former United Chrome Products, Inc. property to prevent unauthorized entry to the Site, with further controls provided by the fencing and security guards to limit access to the airport complex. The City, as required by the CD, placed a deed restriction on the Site to restrict groundwater use and well pumping, the areal extent of which includes all upper zone and deep aquifer groundwater which exceeds the chromium drinking water MCL. The pumping exclusion zone was established on April 2, 1993, and remains in effect.

In 1998, further site characterization for residual chromium deposits revealed the presence of two "hot spots" or zones of highly concentrated chromium-contaminated soil. These areas of residual chromium appeared to be preventing the groundwater cleanup target from being met. In October 2000, the City of Corvallis completed a soil removal action which removed a total of 1,956 tons of chromium-contaminated soil for disposal at a permitted hazardous waste landfill. All soils with chromium concentrations greater than 6,000 mg/kg (the level determined to be protective of the lower aquifer) were removed.

Except for part-time operation during the startup phase, temporary shutdowns for cold weather, and a 55-day temporary shutdown for the supplemental soil removal action performed in September 2000, the groundwater extraction and treatment system (GETS) operated continuously until December 2004, logging 107,502 hours of operation for an overall uptime efficiency of 85 percent. During this time, 32,100 pounds of chromium were recovered from 84.1 million gallons of extracted groundwater.

In December 2004, all pumping at the Site was terminated and a compliance monitoring program was initiated to determine the effect of groundwater extraction shutdown. At the time of shutdown, the upper zone cleanup standard of 10 mg/L chromium had been met at 48 of 49 monitoring locations, and the deep aquifer cleanup standard of 0.1 mg/L chromium had been met at 15 of 17 locations. Compliance monitoring results indicate that the area where groundwater exceeds the 0.1 mg/L MCL in the lower drinking water aquifer is limited to a small area immediately beneath the residual contamination below where United Chrome Products Inc. operated and disposed of wastes. Groundwater monitoring is continuing in both the upper zone and lower aquifer to identify any changes or increasing trends in concentrations, and the City, DEQ, and EPA are currently evaluating the performance of the remedy and the best way to achieve the objectives of the remedy and complete the remedial actions at the Site.

III. BASIS FOR THE SIGNIFICANT DIFFERENCES

Subsequent Events and New Information Since Issuance of the ROD

Subsequent to the issuance of the ROD, the first ESD, the AO, initial two Five Year Reviews, and the CD, the third *Five-Year Review for the United Chrome Products Site, Corvallis, Oregon, March 2003* (3rd 5YR) was completed. The 3rd 5YR concluded that additional institutional controls were needed to restrict land use because chromium concentrations in upper zone soils were higher than considered protective for direct contact for residential or industrial land uses. In addition, the 3rd 5YR concluded that the prohibition on extraction or use of the groundwater at the Property for consumption or other beneficial use needs to be maintained for as long as the hazardous substance concentrations exceed the acceptable risk level for such use. These institutional controls for the Site were not documented in the ROD. This change to the remedy is made by EPA to ensure the remedy remains protective of human health and the environment, supports attainment of the Remedial Action Objectives (RAOs) and complies with Applicable or Relevant and Appropriate Requirements (ARARs). The significant change is the clarification that the selected remedy includes the requirement to impose and maintain institutional controls on the Site to restrict groundwater use until groundwater achieves drinking water standards, to prohibit residential use of the Site so long as contamination remains above levels that allow for unrestricted use and unlimited exposure, and to restrict industrial and commercial uses of the Site to prevent unacceptable exposure to residual contamination for as long as hazardous substance concentrations exceed the acceptable risk level for industrial and commercial uses.

Supporting Information

This ESD is based on information collected and developed since the ROD was issued in 1986 and subsequent to the issuance of the first ESD. This information is contained in the Administrative Record for the United Chrome Products Site. The primary documents referenced in this ESD include:

- *City of Corvallis Consent Decree, United States on behalf of the Environmental Protection Agency, Plaintiff v. City of Corvallis, Defendant* (June 22, 1992).
- *Five Year Review Report (Third) Five-Year Review for United Chrome Products Site, Corvallis, Oregon* (March 2003)
- *Screening Human Health Risk Assessment for Hexavalent Chromium in Soils and Qualitative Assessment of Heavy Metals in Ditch Sediment, Oregon Department of Environmental Quality* (June 20, 2002).

IV. DESCRIPTION OF THE SIGNIFICANT DIFFERENCE

The significant difference is the clarification to the Remedy that for so long as hazardous substance concentrations exceed levels that allow for unrestricted use and unlimited exposure, the selected remedy includes institutional controls to accomplish the following:

- Establish a groundwater exclusion zone encompassing all groundwater contaminated with chromium above the MCL within which extraction or use of the groundwater for consumption or other use, except as to treatment, monitoring, temporary dewatering related to response action, is prohibited; and
- Prohibit residential use of areas where residual soils exceed acceptable risk levels for so long as contamination remains above levels that allow for unrestricted use and unlimited exposure; and,
- Restrict industrial and commercial uses of the Site to prevent unacceptable exposure to residual contamination.

In addition to the existing deed restriction on groundwater use, the City of Corvallis must execute and record in Benton County an Easement and Equitable Servitudes (EES), or similarly restrictive document that runs with the land, to implement all the necessary restrictions. The City and/or any successor owners will have primary responsibility for maintaining and ensuring all lessees and tenants are aware of, and comply with, the restrictions until such time as DEQ and EPA agree in writing the restrictions can be modified or removed.

Expected Outcomes Following Implementation of the Significant Difference

EPA expects that the significant difference identified in this ESD will affect the expected outcomes of the remedy as follows:

Uses of the Site, including soils and groundwater will be restricted as necessary until chromium concentrations in groundwater and soils are protective of human health and the environment for unrestricted use and unlimited exposure.

V. HIGHLIGHTS OF COMMUNITY PARTICIPATION

In accordance with the public participation requirements set out in the NCP, Section 300.435(c)(2)(i)(B), when this ESD is issued a public notice of its availability will be published in a local newspaper. In addition, a copy of the public notice will be mailed to the United Chrome Products Site mailing list. The Administrative Record, including this ESD, will be available for public review at the Site information repositories listed above.

VI. SUPPORT AGENCY COMMENTS

The DEQ reviewed the ESD and provided comments to EPA. The final ESD addresses DEQ's comments and DEQ supports issuance of this ESD.

VII. STATUTORY DETERMINATIONS

This ESD changes components of the remedy selected in the ROD. The remedy continues to satisfy the provisions of Section 121 of CERCLA, 42 USC § 9621. DEQ and EPA believe the remedy is protective of human health and the environment, attains Federal and State requirements that are legally applicable or relevant and appropriate for this remedial action as identified in the ROD and modified by this ESD, is cost effective, and continues to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. This remedy also continues to satisfy the statutory preference for treatment that reduces toxicity, mobility, and volume of hazardous substances as a principal element. As provided in the ROD, reviews will be conducted every five years to ensure that the remedy continues to provide adequate protection of human health and the environment. Completion of the fourth Five-Year Review is in progress.